

To attempt to define zones or regions for such a group is a hopeless task for scarcely any barrier is effective for all the species, all the time; even the seas are crossed in the abundance of geologic time; the best one can do is to indicate the avenues of distribution the insects have followed, the sea beach, the river systems, the broad valleys and plains, along which some species have travelled further, some not so far, according to the adaptability of the organism to the new environments it has encountered, and the accidents that have assisted or retarded its progress.

Such avenues of distribution have been outlined in F. M. Webster's paper in *Psyche* on "Diffusion" and, though reached by entirely different reasoning, are not very different to those here suggested.

Turning to Mr. Harris's collection for a last look at *Tetracha* you may see what has happened to that genus—the most abundant of the tribe Megacephalini, represented in South America by numerous species, more capable of sustained flight than most, attracted to light, easily spreading through the mainland of Central America to Mexico, represented there by many species, with more difficulty crossing the seas between the West Indian islands and there represented by fewer species. Finally reaching the United States reduced to two species represented by numerous individuals in our southern states but until a few years ago, unknown northward. Then thanks to electric lights perhaps, it became abundant in Cincinnati. Last year, by Mr. Davis's fortunate capture, we learned that it had reached Long Island.

It is by accident that every beetle in Mr. Harris's box has its head pointed northward, but nevertheless it indicates, as truly as the magnetic needle indicates the pole, the direction in which these species are moving.

NOTES ON THE DISTRIBUTION OF SEVERAL SPECIES OF TIGER BEETLES.

By WM. T. DAVIS,

NEW BRIGHTON, N. Y.

On June 28, 1911, Mr. Ernest Shoemaker and the writer, with some Washington friends, went to Chesapeake Beach, Md., in search

of insects. First we walked north along the beach below a moderately high bank where there were fossil shark's teeth and various mollusks. Along this shore we found *Cicindela hirticollis* and many *Cicindela marginata*. The last mentioned is usually found on mud-flats, but in this instance the beetles were running on the beach close to the edge of the water of the bay. Later we turned south and crossing Fishing Creek, followed the beach below the very high and commanding bluffs into which the sea is ever eating its way. The soil is largely a clay, and as it falls onto the beach it mixes with the sand, and the character of the beach is thus materially changed. At high tide the water in most places comes up to the very base of the bluffs, but there are several recessions in the hills in front of which there is a narrow beach. Here we found two other species of *Cicindela* in considerable numbers, namely *repanda* and *puritana*. It was certainly a surprise to find the latter species running on the beach of Chesapeake Bay, when its habitat has been usually given as along the Connecticut River at several places in New Hampshire and Connecticut. It is also reported from "New York," but without definite locality. Mr. Leng has pointed out to me that when Dr. Leconte printed his "Catalogue of the Geodephagous Coleoptera" in the Annals of the New York Academy of Sciences in 1846, he considered the present *puritana*, as later named by Dr. Horn in 1871, a variety of *blanda*. Under var. *a* he describes it as having the elytra fusco-olivaceous with separate narrow marks, and gives as habitat Connecticut River, Roanoke River and St. Croix River in Wisconsin. The Wisconsin specimens were afterwards separated under the name of *macra* by Dr. Leconte. The Roanoke River locality has not been recently confirmed, but it must have been at least 150 miles to the south or southwest of the Chesapeake Beach colony of *puritana*.

Cicindela rugifrons has not been very often found about Washington, D. C., and Mr. Henry Ulke says of it in his "List of the Beetles of the District of Columbia," "On the hills near Benning's Station, not rare many years ago, but not found again." Mr. Frederick Knab has since found it on one occasion west of Beltsville, Md., and this past summer in company with Mr. Clarence R. Shoemaker, we found many *rugifrons*, *vulgaris* and *repanda* in an old gravel quarry at Hyattsville, Md., which is three and one half miles north of Benning's Station. All of the many specimens of *rugifrons* that we saw were spotted.

Cicindela scxguttata seems to be absent from the real pine barrens of New Jersey, but an interesting colony of the species was found on May 1, 1911, at Jamesburg. Here in an area of about a mile in diameter, covered mainly with pitch pines and with the eminently pine barren plant, *Pyridanthera barbulata*, growing along the wood roads, *scxguttata* was found in great abundance, and sixteen specimens collected. Many more were seen. *Cicindela rugifrons* is also to be found in this area, which is indicated as pine barrens on the map accompanying the last list of the insects of New Jersey.

Cicindela unipunctata was found running on a road at Ridgeway, N. J., on August 13, 1911, a cloudy day. The insect has been found to the north and south, at Lakewood and Lakehurst.

The natural prairie on Long Island which once occupied the land tracts known as the Hempstead Plain and the East Meadow has not all been plowed. There are still some areas that have fortunately remained undisturbed which support an interesting flora and many insects. The ground in places is often covered with lichens until it is gray in color; there is much *Salix tristis*, *Aster linariifolius*, *Tephrosia virginiana* and *Baptisia tinctoria*. There are pleasant park-like places with large black jack oaks and post oaks. The grasshopper *Spharagemon collaris scudderi* is to be found there in considerable numbers. From these facts it might be judged that the soil is poor and barren, but it responds to cultivation and good crops are raised in the parts that have been plowed. For some time past a steam plow, that turns eight furrows at a time, has been at work, and hundreds of acres of the prairie have been disturbed for the first time. It was while walking about this interesting place on September 8, 1911, a dark cloudy day, that I found on a narrow road about a mile northwest of Central Park railroad station, a female *Tetracha virginica*. The beetle was active and running quite fast. It made no attempt to fly as I picked it up. I was astonished to find this tiger beetle unknown till the present time from New Jersey, as far north as Long Island, N. Y. It is not common in the District of Columbia; Pennsylvania is given as a locality, and Mr. Charles Dury has found it flying about electric lights in Cincinnati, Ohio. The surroundings would lead one to suppose that it was not artificially introduced, and it is certain that what remains of the one time wide stretch of natural prairie, still harbors a number of insects and plants of interest.

I would recommend it to the consideration of local naturalists, as it may be easily more fully explored by them, being near to New York and Brooklyn.

FALAGRIA MANNH. AND ITS RELATIVES.

By A. FENYES,

PASADENA, CAL.

The genera grouped with *Falagria* Mannh. are to be distinguished from the other genera of the tribe Myrmedoniini (subfam. Aleocharinæ, fam. Staphylinidæ, Col.) by the following characters: head with a narrow neck; genæ not margined; antennæ 11-jointed; ligula bifid; paraglossæ visible; inner lobe of the maxillæ on the inner margin spinose and hairy, outer lobe at tip finely ciliate; maxillary palpi 4-, labial 3-jointed; the first two free ventral segments of the abdomen constricted at base; prosternum behind the front coxæ on each side with a corneous plate; middle coxæ separated (except in *Drepanopora* Brnhr.); tarsi 4-5 jointed, hind tarsi with joint 1 elongate.

SYNOPTIC TABLE OF THE FALAGRIOID GENERA.

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| 1. Middle coxal cavities closed behind..... | 2 |
| Middle coxal cavities open behind | 3 |
| 2. Mesosternum carinate | <i>Lophagria</i> Csy. |
| Mesosternum simple | <i>Cardiola</i> M. & Rey. |
| 3. Right mandible bidentate | <i>Borboropora</i> Kr. |
| Right mandible unidentate or simple | 4 |
| 4. Right mandible simple | <i>Aleodorus</i> Say. |
| Right mandible unidentate | 5 |
| 5. Left mandible also dentate | 6 |
| Left mandible simple | 7 |
| 6. Head very large | <i>Drepanopora</i> Brnhr. |
| Head moderately large | <i>Eccoptoglossa</i> Luze. |
| 7. Corneous plates of the prosternum very small, the plates separated in the middle line | <i>Falagriota</i> Csy. |
| Corneous plates of the prosternum moderate in size or large | 8 |
| 8. Scutellum unisulcate and bicarinate | <i>Falagria</i> Mannh. |
| Scutellum simple, as a rule | 9 |
| 9. Corneous plates of the prosternum contiguous with the prosternal process | <i>Stenagria</i> Shp. |